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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/079,107

Filing Date: February 20, 2002

Appellant(s): KIM ET AL.

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Thomas A. Mattioli  
For Appellant

**SUPPLEMENTAL EXAMINER'S ANSWER**

This is in response to the appeal brief filed 02/19/2008 appealing from the Office action  
mailed 08/15/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

09/999,287; 10/071,903; 10/071,917; 10/077,076; 10/077,565; and 10/107,465.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

Claims 1-4, and 13-16 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of various copending Applications. The Appellant is willing to submit a terminal disclaimer to overcome the rejections over the claims of the Applications cited if the Application is otherwise allowable.

Claims 5-8 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention.

Claims 1 and 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dabak et al. (U.S. Patent No. 6,775,260 B1) in view of Ylitalo et al. (U.S. Patent No. 6,788,661 B1). Claims 2-4 and 6-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dabak et al. in view of Ylitalo et al., and further in view of Akiba et al. (U.S. Patent No. 6,721,300). Claims 13 and 15 stand rejected under 35 U.S.C. §103(a) as being anticipated by Dabak et al. (U.S. Patent No. 6,594,473). Claims 14 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dabak et al. (U.S. Patent No. 6,594,473) in view of Akiba (U.S. Patent No. 6,721,300).

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,775,260 B1	Dabak et al.	08-2004
6,788,661 B1	Ylitalo et al.	09-2004
6,721,300	Akiba et al.	04-2004
6,594,473 B1	Dabak et al.	07-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

- (i) Claims 1-4 and 13-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/071903. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 1-4 and 13-14 are the same limitations recited in claims 1-4 and 13-14, respectively, of copending Application No. 10/071903, but they have different preambles.
- (ii) Claims 1-4 and 13-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/071917. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 1-4 and 13-14 are the same limitations recited in claims 1-4 and 13-14, respectively, of copending Application No. 10/071917, but they have different preambles.
- (iii) Claims 5-8 and 15-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/077076. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 5-8 and 15-16 are the same limitations recited in claims 1-4 and 9-10, respectively, of copending Application No. 10/077076, but they have different preambles.
- (iv) Claims 5-8 and 15-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/077565. Although the conflicting claims are not identical,

they are not patentably distinct from each other because the limitations recited in claims 5-8 and 15-16 are the same limitations recited in claims 1-4 and 9-10, respectively, of copending Application No. 10/077565, but they have different preambles.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 3-4, recited, *“a first and second antenna for transmitting said data field of symbols wherein said data field includes a first data field;”* it indicates both antennas transmit the same data field of symbols. However, figure 2 shows the data field of symbols transmit at the antennas 15 and 16 are different, the data field of symbols  $D_1$  and  $D_2$  are transmitted at antenna 15, and  $-D_2^*$  and  $D_1^*$  are transmitted at the antenna 16. Furthermore, lines 5-6 recited, *“an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field;”* it indicates the encoder encodes all of data fields  $D_1$ ,  $D_2$ ,  $-D_2^*$  and  $D_1^*$ . It is confusing the word “said data field” recited in the claim.

Claims 6-8 are rejected because they depend on rejected claim 5.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(i) Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak et al, US Patent No. 6,775,260 B1, in view of Ylitalo et al, US Patent No. 6,788,661 B1, hereinafter referred to as Dabak '260 and Ylitalo respectively.

Regarding claim 1, Dabak '260 discloses a system called "Space time block coded transmit antenna diversity for WCDMA". Dabak teaches the system, see figs. 1-2 and col. 4, lines 9-52, comprising:

generating data symbols S input at 106 (generating a first data field of symbols);  
a space time transmit diversity (STTD) encoder 110 produces complex conjugate symbols S\* from the input data symbols S (encoding said first data field producing a second data field having complex conjugates of the symbols of said data field);  
transmitting data symbols of S and S\* over a first and second antennas ANT1 112 and ANT2 114. See fig. 1 (transmitting an RF signal including said first and second spread data fields over a first and second antenna.)

Dabak '260 does not disclose the data symbols S are spread using a first channelization code that is uniquely associated with a first antenna and the data symbols S\* are spread using a second channelization code. However, Ylitalo discloses

"Adaptive beam-time coding method and apparatus." The apparatus comprises a first orthogonal code (OC) associated with a first antenna (fig. 4, 16; fig. 5, 106), and a second orthogonal code associated with a second antenna (fig. 4, 18; fig. 5, 108) for transmission data. See figs. 4-5, col. 4, lines 56-58, and col. 5, lines 37-40. Thus, according to the KSR International Co. v. Teleflex Inc., 550 U.S., 82 USPQ2d 1385, 2007, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the first and second orthogonal codes disclosed by Ylitalo into Dabak's system in order to reduce interferences RF data signals.

Regarding claim 5, as best understood, Dabak '260 discloses the system comprising:

a first and second antennas 112 and 114 for transmitting data symbols, wherein the data symbols comprises S data symbols (a first and second antenna for transmitting said data field of symbols, wherein said data field includes a first data field);

an encoder 110 for encoding S data symbols to produce a S<sup>\*</sup> (an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field);

Dabak '260 does not disclose the system comprises a first channelization device for receiving the data field including the first data field and spreading said first data field, wherein said first channelization device spreads said first data field using a first channelization code that is uniquely associated with the first antenna; and comprises a second channelization device for receiving the second data field from the encoder and spreading said second data field using a second channelization code, the second

channelization code being uniquely associated with the second antenna. However, Ylitalo discloses "Adaptive beam-time coding method and apparatus." The apparatus comprises a first orthogonal code (OC) associated with a first antenna (fig. 4, 16; fig. 5, 106), and a second orthogonal code associated with a second antenna (fig. 4, 18; fig. 5, 108) for transmission data. See figs. 4-5, col. 4, lines 56-58, and col. 5, lines 37-40. See KSR International Co. v. Teleflex Inc., 550 U.S., 82 USPQ2d 1385, 2007. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the first and second orthogonal codes disclosed by Ylitalo into Dabak's system in order to reduce interferences RF data signals.

(ii) Claims 2-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak '260 and Ylitalo as shown above, and further in view of Akiba et al, US Patent No. 6,721,300 B1, hereinafter referred to as Dabak '260, Ylitalo and Akiba respectively.

Regarding claims 2 and 6, both Dabak '260 and Ylitalo do not disclose the system comprises a first and second scrambling devices for scrambling the first and second spread data fields by a single scrambling code associated with the transmitter. However, Akiba discloses STTD encoding method and diversity transmitter, wherein the transmitter (fig. 1) comprises scrambler 114 and 116 that multiply a scrambling code to the data transmission. See fig. 1, col. 4, lines 11-14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt scrambling code disclosed by Akiba into Dabak '260 system in order to protect data transmission in the network.

Regarding claims 3 and 7, Dabak '260 discloses that the data symbols S comprise a sub-data  $S_1$  and a sub-data  $S_2$ . See figure 1 (wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field.)

Regarding claims 4 and 8, Dabak '260 discloses the STTD encoder 110 encodes the sub-data  $S_1$  to produce a complex conjugate  $S_1^*$ , and the sub-data  $S_2$  to produce a negative complex conjugate  $-S_2^*$ . See figure 1 (wherein the symbols of said second data field of symbols are grouped into a third and fourth sub-data field, wherein said third sub-data field is the negative complex conjugate of said second sub-data field and said fourth sub-data field is the complex conjugate of said first sub-data field.)

(iii) Claims 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Dabak et al, US Patent No. 6,594,473 B1, hereinafter referred to as Dabak '473.

Regarding claims 13 and 15, Dabak '473 discloses a wireless system with transmitter having multiple transmit antennas. The system comprising the steps of: generating data symbols  $S_1$ . See figure 4 (generating a data field of symbols, wherein said data field includes a first data field);

spreading the data symbol  $S_1$  using a first Wash code  $W_1$  producing  $W_1S_1$ . See fig. 4 (spreading said first data field using a first channelization code producing a first spread data field);

spreading the data symbol  $S_1$  using a second Wash code  $W_2$  producing  $W_2S_1$ . See fig. 4 (spreading said first data field using a second channelization code producing a second spread data field);

wherein  $W_1$  associated with an antenna AT1, and  $W_2$  associated with an antenna AT3 (each channelization code being uniquely associated with one of a first and second antennas);

transmitting  $W_1S_1$  and  $W_2S_1$  over the antennas AT1 and AT3. See figure 4 (transmitting an RF signal including said first and second spread data fields over a first and second antenna.)

Dabak '473 discloses the first channelization code associates with antennas 1 and 2, and the second channelization code associates with antennas 3 and 4, i.e. each of the channel codes is not uniquely associated with the first or the second antennas. It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce time delay for processing data symbols by simplifying diversity antenna system disclosed by Dabak '473 from 4 to 2 antennas.

(iv) Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak '473 as shown above, in view of Akiba et al, US Patent No. 6,721,300 B1, hereinafter referred to as Dabak '473 and Akiba respectively.

Regarding claims 14 and 16, Dabak '473 does not disclose the system comprises a first and second scrambling device for scrambling the first and second spread data fields by a single scrambling code associated with the transmitter. However, Akiba discloses STTD encoding method and diversity transmitter, wherein the transmitter (fig. 1) comprises scrambler 114 and 116 for multiplier a scrambling code to the data transmission. See fig. 1, col. 4, lines 11-14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt scrambling code

disclosed by Akiba into Dabak '473 system in order to protect data transmission in the network.

#### **(10) Response to Argument**

The arguments regarding the art rejections are not persuasive for the following reasons:

Regarding claims 1-4, page 8, Appellants argue that claims 1-4 meet the requirements of 35 U.S.C. §112, second paragraph. Examiner respectfully disagrees. Claim 1, lines 3-4, recited, "*a first and second antenna for transmitting said data field of symbols wherein said data field includes a first data field;*" it indicates both antennas transmit the same data field of symbols. However, figure 2 and paragraph [00025] show the data symbols transmit at the antennas 15 and 16 are different. The data symbols  $D_1$  and  $D_2$  are transmitted at antenna 15, and  $-D_2^*$  and  $D_1^*$  are transmitted at antenna 16. Furthermore, lines 5-6 recited, "*an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field;*" it indicates the encoder encodes all of data fields  $D_1$ ,  $D_2$ ,  $-D_2^*$  and  $D_1^*$  to produce a second data field. According to the specification in paragraph [00023] the encoder encodes only  $D_1$  and  $D_2$  to produce  $D_1^*$  and  $-D_2^*$  respectively. It is confusing the word "said data field" recited in the claim.

Regarding claims 1 and 5, page 9, Appellants argue, "*[T]here is no disclosure, teaching or suggestion in the Ylitalo reference that a first channelization code that spreads a data field is uniquely associated with a first transmission antenna and a second channelization code that spreads a data field is uniquely associated with a*

***second transmission antenna, as is recited in the Applicant's independent claim 1."***

Examiner respectfully disagrees. Appellants are directed to figures 4-5, col. col. 4 lines 54-59, and col. 5, lines 37-41 of the reference, wherein Ylitalo clearly discloses the multipliers 12 and 14 impart the first and second spread spectrum codes (OC) into the first communication burst (combined  $S_1$  and  $-S_2$ ) and second communication burst (combined  $S_2$  and  $S_1$ ). The first spread spectrum code is different with the second spread spectrum code; see col. 4 lines 54-59, and col. 5, lines 37-41. The first spread spectrum code is associated with the first antennas 16, and the second spread spectrum code is associated with the second antennas 18, see figs. 4 and 5. Applying a known technique (a first and second spread spectrum codes associate with a first and second antennas) to improve a known system (Dabak) that would have been obvious to one of ordinary skill in the art. See *KSR International Co. v. Teleflex Inc.*, 550 U.S., 82 USPQ2d 1385, 2007.

Thus, rejection of claims 1 and 5 is proper.

Regarding claims 2, 6, 14 and 16, pages 10-11, Appellants argue, "*scrambling the first and second spread data fields by a scrambling code associated with the transmitter, which is not disclosed, taught or suggested by the Ylitalo, Dabak or Akiba references taken alone or in any combination with one another.*" Examiner respectfully disagrees. Akiba discloses STTD encoding method and diversity transmitter, wherein the transmitter (fig. 1) comprises scramblers 114 and 116 for multiplying a scrambling code to spread data transmitted on antennas 118 and 120. See fig. 1, col. 4, lines 7-14. Applying a known technique (scrambling code) to improve a known system (Dabak) that

would have been obvious to one of ordinary skill in the art. See *KSR International Co. v. Teleflex Inc.*, 550 U.S., 82 USPQ2d 1385, 2007.

Thus, rejection of claims 2 and 10 is proper.

Regarding claims 13 and 15, page 10, Appellants argue, “*there is no disclosure, teaching, or suggestion in the Dabak reference of any channelization code being uniquely associated with a particular antenna.*” Dabak discloses each Walsh code is associated with 2 antennas instead of associated with only one antenna as recited in claim 13. It has been held that the omission an element and its function is an obvious expedient if the remaining elements perform the same function as before. See *In re Karlson*, 136 USPQ 184 (CCPA). Also note *Ex parte Rainu*, 168 USPQ 375 (Bd.App.1969).

Thus, rejection of claims 13 and 15 is proper.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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